FINAL REPORT ON DEER TRAPPING IN ITASCA PARK

By: Gustav Swanson
April, 1936

Introduction:

For several years it has been obvious to trained observers that Itasca Park was suffering from the presence of a deer herd much too large for the supply of natural food in the Park. This point has been disputed by local individuals somewhat but has come to be generally accepted even by those who formerly questioned the point since a large number of deer have been found in a starving condition in this area. Itasca Park contains an area of 31,600 acres, all of which is a game refuge and in addition, the refuge extends one quarter mile beyond the Park on all sides. The area in which hunting is prohibited, therefore, is a rectangle approximately eight miles by eight miles in size.

On this area, reports indicate that the natural food and cover was far superior fifteen or twenty years ago to that in surrounding territories which had been more thoroughly burned or logged. The superior cover, together with the protection from hunting and from the natural enemies of deer, the wolves, has made Itasca Park very attractive to deer and has had the effect of increasing the herd to the present large size. The local residents are insistent that the size of the deer herd in winter is several times that in summer and point out a definite migration toward the Park in the fall and that the deer leave the Park in the spring. To what extent this is true, it is difficult to state but the fact remains that both in summer and in the winter the population of deer within the Park is very high and the winter supply of natural food has for several years been inadequate to support the herd.

Census Figures:

Until the present year, we have had no adequate census figures for the deer population in Itasca Park. In the winter of 1934-1935 the State Division of Foresty, then in charge of the Park, carried on an attempt to determine the approximate number of deer by using a method of counting trails and fresh bedding places. They arrived at a figure which varied between 1,800 and 2,700 deer for the entire Park but admitted that this estimate was not meant to be accurate. During the past winter, the National Park Service C.C.C. Camp S.P. 1, located in Itasca Park, has carried on three censuses on sample areas chosen to represent the entire Park. These three censuses were taken to represent the winter deer population in the Park. Only one area was driven earlier, in order to determine the average population during the summer months.

The method which is used is to surround an entire section, 640 acres, with a number of men adequate to count every deer which is driven out of the area. Thus, on three sides men are stationed at distances such that they can easily see the men adjoining their stations and any deer which leave the area between them. On the fourth side of the square area, a larger number of men is used in the drive line and this line at a given signal moves slowly through the entire mile driving out every deer from the section. Each man is supplied with a card on which to record the deer seen by him leaving the area and all of these cards are carefully checked against each other to be certain that no duplications are made. This method gives an adequate figure for the deer in the particular square mile which is driven and if representative or typical areas can be chosen as samples, there is no reason to believe that the estimate of the total population is not reasonably accurate.

On August 30, 1935, Section 20 in the western one-third of the Park was driven by the use of this method and 36 deer were found in the area. This was the only summer drive.

The results on the winter drives may be tabulated as follows:

	Bucks	Does	Fawns	Unidentified	Total
Sec. 25 (Nov.22,1935)	7	22	12	9	50
Sec. 9 (Dec.6,1935)	11	35	9	10	65
Sec. 20 (Dec.7,1935)	7	34	11	5	57

The average number of deer from these three drives per square mile is thus about 57. Subtacting areas known to be non-productive such as lakes, etc., the total winter population would be estimated at not less than 2,~~000~~ 719 for the entire Park. With Itasca Park in the condition which now faces it, this population is undoubtedly more than twice as great as the Park can support adequately.

It was felt that the opinion of Mr. Feeney of the National Park Service should be corroborated with that of other qualified individuals and accordingly letters were written to Dr. C.O. Rosendahl, Professor E.G. Cheyney and Mr. Ralph T. King of the University of Minnesota and Mr. C.M. Aldous of the Bureau of Biological Survey. All of these men have spent considerable time in Itasca Park and it was felt that their opinions should carry much weight. They were of one opinion that Itasca Park had too large a population of deer for the state of the natural food supply in the Park. Some excerpts from Dr. Rosendahl's ltt their letters will indicate the different opinions:

> "For the last sixteen years, I have spent six weeks each summer teaching in the Forestry School in the Park. I have, also, visited the Park on numerous occasions both in the spring and in the autumn. I have, therefore, had

opportunity to range over most of the Park area and make observations on both the woody and herbaceous vegetation and watch the changes that have taken place during this period.

It is my convicition that the situation has reached an acute stage as regards tree reproduction, browse, and the condition of the deer herd itself. For the last ten years, I have failed to find a single young white pine to survive beyond the seedling stage. As soon as the young trees attain sufficient height to reach above the snow level, the tops are nipped off, and as the snow melts in the spring, the side branches fare the same way. During the last four to five years, the reproduction of other tree species has become seriously affected, but there is not the complete destruction that obtains in the case of the White pine. The only evergreens that seem to be immune are the White and Black spruce."

ALDOUS: "Ever since my first trip into Itasca State Park in the summer of 1932, I have been of the opinion that the deer population was too great. In the years since that I have examined parts of the park and I find a noticable deer line over the greater part of this splendid park. A deer line is a sure sign of a dangerously high deer population. Too, I have examined this park for coniferous reproduction and sorry to say there is a very conspicuous absence of any type of these young trees or seedlings. Of course this fact cannot all be blamed onto the deer as the snowshoe rabbit probably is largely responsible for this, although the deer no doubt have had something to do with it.

This park has an rea of some 31000 acres and this acreage should not be populated with more than 800 to 1000 head of deer at any time. Anything in excess of a thousand deer should be removed by live trapping and the same released in areas of the State much less populated."

These opinions are typical of those obtained from foresters and wild life technicians who have examined the Park.

Mortality:

It is perfectly obvious from even casual observations that the natural reproduction of forest trees has been almost totally destroyed chiefly by deer in the Park but the effect of the high population of deer has extended beyond that on the forest alone and the deer herd itself has suffered greatly. Thus far we have no means of determining the exact number of deer which have died in Itasca Park

due to starvation but an indication of the mortality may be obtained from the fact that in March 1935, Mr. W.S. Feeney, National Park Service Wildlife Inspector and his men found 20 dead deer on one small area of four square miles. All of these deer were emaciated and obviously had died of starvation. In no case have the examinations revealed any other cause of death than starvation, although it has been suggested on occasion that the dead deer were probably cripples. During February and March of 1936, 52 starved deer have been found incidental to other work which was being carried on. Because of the large size of the Park, it is impossible to cover any large percentage of the area in search of these deer and the 52 which have been found are undoubtedly a mere fraction of those which have starved during the late winter.

In addition to those which have actually starved to death, the large percentage of the deer which may be seen in the Park and which were caught in the deer traps were in such weakened condition from under nourishment that obvious emergency measures were necessary to keep them from dying. Some of these deer were kept for a time in a corral at the Park headquarters while they were fed alfalfa and oats in an effort to build up their physical condition. Photographs of these deer are appended together with one of a mature doe which was so weak that it was easily caught by merely running after it.

Remedies:

It is apparent that the situation with respect to the deer is gradually changing naturally because of the large number of deer which are dying in the Park each winter. With the improvement in cover and food outside the Park and the dying of large numbers of deer in the Park each winter, it seems logical to expect that within

a few years a balance will be reached no matter what is done. In the meantime, however, large numbers of deer are dying yearly in the Park which could be used elsewhere if they were removed from the Park area. It was with this thought in mind that attempts were made to determine the feasibility of trapping and removing deer from Itasca Park to less fully populated areas where food was more abundant. Correspondence with the Game Departments of Pennsylvania, Wisconsin and Michigan revealed that in recent years techniques have been developed for trapping in a manner which resulted in only a small mortality. Earlier efforts which had used a corral method of capturing had resulted in such high mortality that for many years it had been thought that trapping of deer was impossible without severe losses. The State of Michigan has trapped deer on a larger scale than any other State and a very complete report was obtained from them together with plans of the traps and tagging crates. Using these same plans similar crates and traps were built in Itasca Park by the Parks C.C.C. Camp.

In order to test the trapping method and also in order to determine whether or not deer in the Park were infested with any parasites of diseases which would make it dangerous to distribute them to other parts of the State, a preliminary trapping experiment was carried on in January. For this purpose, nine traps were built and distributed in favorably located areas in the Park. When the traps were ready, Doctors Fenstermacher and Fitch of the Division of Veterinary Medicine were asked to be present in order to examine some of the deer for purposes of determining what parasites and diseases might be present. They remained in the Park for three days and examined three deer, one buck, one doe, and one fawn. In

these examinations, they found no diseases or parasite of any importance at all and a superficial examination of other deer which were caught in traps during the days when they were present revealed nothing which might be interpreted as a dangerous condition and consequently, it was felt that it would be safe to transport any deer which were caught in the Park for release elsewhere. This preliminary trapping experiment also showed quite definitely how simple a matter it would be to trap these deer. The traps were constructed from green jackpine lumber as shown in the appended photographs and were 4' x 4' x 12' in dimensions. On the first day of trapping, nine traps had been set and 14 deer were taken, one trap containing three deer, three containing two each, and the remainder except one contained one deer each. Complete report of the deer which were tagged and released is appended later but it might be said thatin the experimental trapping 50 catches were made in six days of trapping with nine traps. About two-fifths of these were retakes as will be shown on the appended sheet.

Deer Removal:

Considerable difficulty was experienced in obtaining transportation for removal of the deer from Itasca Park to other areas. The C.C.C. Camp did not have sufficient trucks to make it possible for them to provide a truck for this purpose and while negotiations were being entered into by the Division of Game and Fish for obtaining a truck, the local residents of Hubbard and Clearwater Counties as well as other nearby counties made such a large number of complaints about the project in a manner which will be described later that it was thought best to abandon the project for the time being. This matter was taken up again, however, at the February meeting of

the Conservation Commission and at that time the Commission reiterated its former stand in requesting that work should go ahead as formerly scheduled and in a letter dated February 17, Mr. Willard again opened the project. From that time on, steps were taken to open the work as quickly as possible and a truck was obtained from the Game Farm at Madelia together with a man who was loaned by Mr. Blair and on February 28th the work again began of trapping deer and those which were in good physical condition were shipped out of the Park to areas which are described on the appended tabulation.

Copies from Custer Smith

Public Opinion and Comments:

In the Itasca Park area there has been considerable criticism of any work which is done in the Park no matter what the character and when a proposal to move some deer was first made, the local residents who did not understand the situation were very free in their criticism of what they had heard through rumors was being planned. This criticism extended to the newspapers and culminated in what may best be described as an indignation meeting which was called by the Park Rapids Rod and Gun Club for Monday evening December 16th. This meeting was attended by about 200 of the local residents and a Mr. Floyd Tilden, Camp Superintendent, G. M. Conzet, Director of the Division of Forestry and myself were all present to explain the work of the deer removal project and other projects which had been misunderstood by these people. Considerable time was spent in out-lining work of similar work which had been done in Michigan and a few of the residents indicated that they had a more thorough grasp of the situation at the time the meeting was finished than before. There was still, however, very definite objection to removing any

deer from the Park and several reasons were offered for this objection. Many of the people insisted that there was no abundance of deer in the Park this year and the word of several local residents was cited in support of this opinion.

Another objection was that the purpose of removing any deer would involve such a high mortality that it would be disastrous to the success of the project. The fact that the Michigan trapping operations using similar traps had met with success seemed to carry no weight in the minds of these people. The people who gathered offered as a solution to the whole problem that the State Division of Game and Fish should buy approximately ten tons of alfalfa to feed the deer herd in the Park. They were almost unanimous in their statement that all that was necessary to alleviate any conditions of distress was artificial feeding with hay and that if the Department would follow this plan the entire problem would be solved happily.

The opinion of the people gathered in this group together with that of others as well seemed very strongly in opposition to any other method of approach and at the close of the meeting a resolution was passed by the gathering indicating that they would protest the removal of more than fifty deer and further that the deer should not be taken more than forty miles away from the Park. This resolution was given wide publicity and both the Park Rapids newspapers and other newspapers in that area were very strong in their protest against the entire project. During the several weeks which followed, the original experimental trapping in January, the public opinion seemed to have been somewhat tempered and it was felt that very little effort would be made to interfere

with the trapping if it were carried on again as requested by the Conservation Commission at its February meeting. The form which the protests have taken have chiefly been newspaper comments decrying the lack of judgment of the Conservation Department in carrying on this project. Excerpts from a typical newspaper comment follow and are an indication of the type of one-sided statement which is given to the paper by the papers in that area:

> "The despoilers, who for several weeks past have been operating in Itasca State Park, completed their operations for the present a few days ago, and what wild life there is remaining in the Park is getting a brief rest. It would be real news to many living in this community to learn that anything of value has been accomplished.
>
> A number of elk have been taken from their enclosure and moved up near the Red Lake Indian Reservation, where the Red Lake Indians will have opportunity to change their diet from venison to elk meat.
>
> The only moose kept in Itasca Park has been taken from its pasture and transplanted to a park near St. Paul.
>
> Colonies of beaver that had gathered late in the fall their winter's supply of food and buried it in the depths of the lakes that they and their young might thrive under natural conditions, have been trapped to be released in new locations where the question of feed was uncertain and preparations for winter conditions were wholly lacking.
>
> And the deer herd that for a generation and more has gathered during winters in the shelter of the large pine groves in Itasca Park, and for many years has had protection against its natural enemies, has been subjected to school-boy experimentation to satisfy young curiosity, while men of experience in the study of wild life have been left from consultation."

The St. Paul Pioneer Press and Daily News have been very careful to obtain the true facts in the case and have been of considerable help to the Department in broadcasting the proper information.

Each of the complaints in this newspaper article is easily answered. ~~The writer has in no case made any attempt to obtain a complete understanding of the reasons behind any steps which have been taken in the Park.~~ We have made no efforts to answer attacks of this kind personally or in the newspapers but for the information of the Conservation Commission a brief explanation may be in order. The elk which are mentioned are all doing very well in the area in which they are released. They are removed from the Indian Reservation by such a distance that there is little opportunity that they will ever be molested by the Indians. The original purpose of obtaining these elk over fifteen years ago was to restock suitable parts of the State with elk and they were kept in Itasca Park merely to allow them to multiply in numbers so that they could later be moved to other parts of the State. Of the 27 animals which were released in November 1935, the exact whereabouts of 23 are now known, There is every reason to believe that this attempt will be successful. (April 1936)./ A sufficient number of elk were left in Itasca Park for exhibition purposes and for forming a nucleous of herd to be released later - perhaps in some other parts of the State. The expense of feeding a large herd of elk in an enclosure in Itasca Park where they were not visible to visitors was not justified and the 8 animals which were left in the Park are sufficient for exhibition purposes.

No proper facilities were available in Itasca Park for keeping the moose which was mentioned and the Park Division did not have funds for building the proper type of enclosure. The two animals had been kept in captivity since they were calves and it would be senseless to release two animals which were so tame and so unsuspected. In addition, one of these animals was of rather vicious temperament

and had proved a considerable problem. Accordingly, the best method of disposal of the moose seemed to be to turn them over to the Como Park where they will be enjoyed by a large number of people and where they can be cared for properly.

The only beaver which were removed from the Park were those which were in areas where the food was inadequate to supply their needs or where the water levels were so low that they were in eminent danger of freezing to death. In the preceeding winter, a large number of beaver had been found dead and others with frozen tails and feet were encountered when a survey was made for the purpose of determining their condition.

The purposes of the deer removal project are taken up in detail in other parts of this report.

Feeding:

No attempt was made to begin feeding deer in Itasca Park until February and March when the deer were in very poor shape. Feeding was not done earlier because we wished to do nothing which would tend to attract any larger number of deer to the Park than were there already. If any of the animals would disperse from the Park for natural food it was felt that that was the best solution but when the first dead deer was found, feeding was immediately begun, and all areas which were available from the roads were stocked with alfalfa hay. The Park Rapids Rod and Gun Club furnished one ton of bailed hay and 4 tons of loose hay, while the Division of Game and Fish purchased two tons of bailed hay and 5½ tons of stacked alfalfa. In addition, 200 pounds of a prepared deer food which was sent as a sample by the Chapin Feed Company in Indiana. This food was apparently very successful and is worth considering purchasing that type of food

for use in areas which present a problem. Artificial feeding should be resorted to only when emergency conditions are encountered but in those cases a food which is concentrated in food value and easily transported to inadequate areas is greatly preferred. The Unicorn deer ration sold by the Chapin Feed Company seems to fill this specification very well but no definite experiments have been made as yet to determine the actual food value. The concentrated deer foods used by the New York State Department of Conservation, however, were tried both in the Duluth area and in Itasca Park when samples were sent from New York. Definite tests have been made in that State on the effects of this particular food concentration and is known to be effective. The New York concentrate is easily prepared from a mixture of soybeans and molasses and with C.C.C. labor available, it is recommended for use in areas which have a large number of starving deer. Any artificial method of feeding is, of course, too expensive to be carried on on a large scale, and can be recommended only in very limited areas. Where it seemed absolutely necessary to feed artificially it is worth considering using these foods rather than hay in view of the many advantages which they have.

A total of 26 deer which were too weak to be released in other areas were caught either in the traps or by hand in Itasca Park. These deer were all placed in a corral at the Park headquarters where they were fed alfalfa and oats in an effort to build up their physical condition before they were released. A ration which consists too largely of alfalfa, however, is known to be a very poor substitute for natural food and a total of 10 of these deer died in the corrals from their previous weakness and from the fact that their food did not have sufficient variety and the remainder of the deer were released

accidentally before they had been tagged. They were, however, in a better physical condition than at the time they were captured. The experience in this case, however, proved without a doubt the fact that alfalfa hay alone is not a satisfactory food for deer. A ration consisting of alfalfa, oats, and corn has proved to be perfectly satisfactory in several instances but alfalfa alone is a poor food for deer.

Respectfully submitted,

Gustav Swanson

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Biologist,
Division of Game and Fish.

GS:RF

TRAPPING EFFICIENCY AND DEER DISTRIBUTION (CONTINUED)

DATE.	TRAPS SET.	DEER CAUGHT.	DEER SHIPPED.	DEER HELD IN TRAP.	DEER RELEASED IN PARK.	DEER INJURED.	HELD FOR FEEDING
2/28/36	12	12	7	4			1 fawn
2/29/36	9	7	8		1		2 fawns
3/2/36	11	7	5			1	2 fawns
3/3/36	11	9	5			1	3 fawns
3/4/36	9	5	3				2 fawns
3/5/36	9	4	3				1 fawn
3/6/36	11	6	4			1	1 fawn
3/8/36	4	3		1	2		
3/9/36	10	5	4				1 fawn 1 mature buck
3/10/36	12	1					1 mature doe
3/11/36	12	5	2				2 fawns 1 old doe
3/12/36	12	4	3			1	
3/13/36	11	6	5				1 fawn
3/16/36	11	6	3				3 fawns
3/17/36	12	7	5			1	1 fawn
3/18/36	12	7	5				2 fawns
3/19/36	12	3	3				
3/20/36	12	6	3				1 fawn

DATE	TRAPS SET.	DEER CAUGHT.	DEER SHIPPED.	DEER HELD IN TRAP.	DEER RELEASED IN PARK.	DEER INJURED.	HELD FOR FEEDING.
3/23/36	12	1		1			
3/24/36	11	5	6				
3/25/36	12	1		1			
3/26/36	11	0					
3/27/36	11	1			2		
TOTAL	249	111	76	7	5	4	26

COMMENTS

3/3/36 A mature buck hurt in trap held at Headquarters. Died 3/5/36

3/6/36 A mature buck was hurt in shipping and then killed.

3/12/36 A mature doe stumbled and broke its neck in the second jump after being released at destination.

3/17/36 One buck fawn hurt in trap and then killed.

The fawns held at Headquarters for feeding were later released.

TAG NO. OF DEER RELEASED LOCATIONS

Location #1:
284 - 251 - 201 - 202 - 281 - 283 - (272-273?)

Location #2:
288 - 289 - 280 - 258 - 256 - 282 - 254 - 287.

Location #3:
270 - 291 - 271 - 292 - 204.

Location #4:
205 - 252 - 206 - 207 - 208 - 209 - 210 -226 - 227 - 259.

Location #5:
211 - 212 - 265 - 214 - 215 - 216 - 217 - 383 - 384 - 385 - 386 - 387 - 388.

Location #6:
221 - 222 - 223 - 224 - 228 - 229 - 230.

Location #7:
232 - 233 - 234 - 235 - 236 - 237 - 238 - 239.

Location #8:
240 - 241 - 242 - 243 - 244 - 378 - 379 - 380 - 381 - 382 (LaPorte)

Location #9:
245 - 246 - 247 - 248 - 249 - 250 - 376 - 377.

EXPLANATION OF DEER RELEASE LOCATIONS

LOCATION	LOCATION #	TYPE OF COUNTRY
2 miles east of bridge crossing Crow Wing River	1	Great deal of swamp land, released between Jack Pine growth and Alder Swamp.
Camp Merriwyn at Peninsula on south side of Lake plantaganette.	2	Great deal of young Jack Pine and Spruce. Large swamp about 1 mile east of where deer were released.
3½ miles west of Laporte on Highway #85.	3	Swamp land, Cedar, Balsam, Spruce, Tamarack.
3 miles west of Laporte on Highway #85. T 143 - R 33 - Sect. 13.	4	Swamp land, Cedar, Balsam, Spruce, Tamarack.
Bemidji State Park. Beltrami Co. T 147 - R 34 - Sect. 24.	5	Mixed hardwoods and conifers.
2 miles west of Badoura on Highway #87. T 139 - R 33 Sect.12.	6	Swamp country, Jack Pine, Balsam, Spruce.
5 miles north of Pine Center	7	Balsam, Spruce, Aspen.
1 mile north of Clearbrook	8	Balsam and Spruce swamp.
Section #4, Thorpe Township, Hubbard Co.	9	Aspen, Balsam, Spruce.

Fig. 1.

Young balsams trimmed by deer except for a few branchlets at top. Photo by W. S. Feeney. 9/11/34.

Fig. 2.

"Deer line" on tamarack at Lake 67.
A deer line is an indication of
severe over-browsing.
Photo by W. S. Feeney. 9/11/34.

Fig. 3.

Young deer found starved in Itasca Park.
3/12/35. W. S. F.

Fig. 4.

Fawn found starved in Itasca Park.
3/8/36/ G. S.

Fig. 5.
Mature doe so weak from malnutrition that it was easily caught by hand.
3/8/36. G. S.

Fig. 6.
Dr. B. F. Ederer with group of the 52 starved fawns found in the Park in February and March, 1936.
G.S.

Fig. 7 - Fig. 8

Two photos of deer taken in the Park which were so weak that it was necessary to hold them in a corral in order to feed them.
3/9/36. G.S.

Fig. 9.
Lorentz Olson and Wardens
Chas. Masoner and Custer
Smith distributing alfalfa
for deer in the Park.
3/9/36.

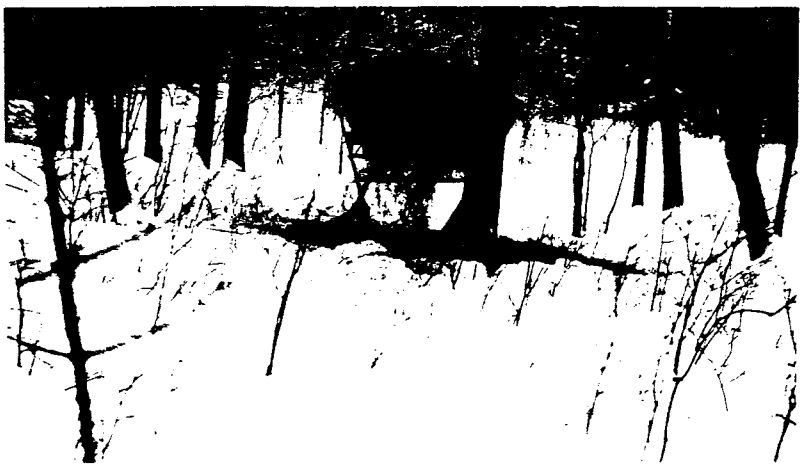

Fig. 10.
One of the many feed racks
at which deer are fed along
the roads. 3/9/36.

Fig. 11.
Two deer at a roadside feeding station in the Park.
3/9/36. G.S.

Fig. 12.
Side view of Stephenson trap used in taking deer in Itasca Park. Dimensions - 4'x4'x12'. Note release door at left.
3/8/36.

Fig. 13.

End of Stephenson trap. Both doors are open while trap is set. 3/8/36.

Fig. 14.
Transferring deer from
trap to tagging crate.
3/9/36.

Fig. 15.
Holding head of deer in
tagging crate for attaching
ear-tag. 3/9/36.

Fig. 16.
Pulling deer in tagging crate to truck. 3/9/36.

Fig. 17.
Transferring deer from tagging crate to shipping crate on truck. 3/9/36.

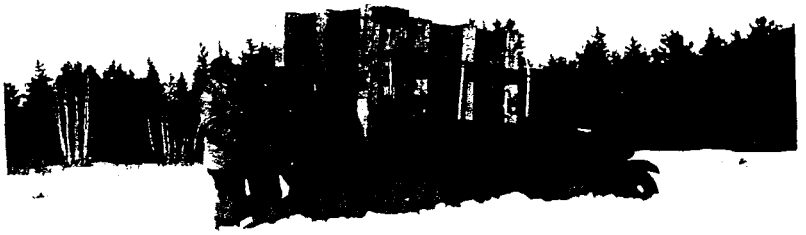

Fig. 18.
A truck load of deer as hauled to a swamp 27 miles southwest of Itasca Park.
3/9/36.

Fig. 19.
Same legend as Fig. 20.

Fig. 20.

Deer being released about 27 miles southeast of Itasca Park.

On Fig. 20 note small ear-tag in right ear of deer.